

Application No. 11/720,607
Attorney Docket No. 2003B126

Amendment to the Claims

This **Listing of Claims** will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 -12 (cancelled)

Claim 13 (currently amended): A catalyst composition consisting of comprising:

- (a) a support;
- (b) a first metal rhodium component comprising rhodium;
- (c) a second metal an indium component comprising indium; and optionally
- (d) a third metal component wherein the metal in said third metal component is selected from the group consisting of iron, cobalt, and ruthenium comprising a metal different from those of said first and second components and selected from Groups 1 to 15 of the Periodic Table of Elements,

wherin at least said first and second metal components and said third metal component if present, are predominantly contained in an outer surface layer of the support having a depth of not more than 300 microns.

Claim 14 -15 (Cancelled)

Claim 16 (Original): The catalyst composition of claim 13 wherein the depth of said outer surface layer of the support is not more than 100 microns.

Claim 17 (cancelled)

Claim 18 (currently amended): The catalyst composition of claim 13, wherein rhodium is present in the amount of and comprising from about 0.01% to about 10% of rhodium by weight of the total catalyst composition including the support.

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Claim 19 (currently amended): The catalyst composition of claim 13, wherein rhodium is present in the amount of and comprising from about 0.04% to about 5% of rhodium by weight of the total catalyst composition including the support.

Claim 20 (currently amended): The catalyst composition of claim 13, wherein indium is present in the amount of and comprising from about 0.01 wt% to about 30 wt% indium by weight of the total catalyst composition including the support.

Claim 21 (currently amended): The catalyst composition of claim 13, wherein indium is present in the amount of and comprising from about 0.04 wt% to about 20 wt% indium by weight of the total catalyst composition including the support.

Claim 22-24 (Cancelled)

Claim 25 (currently amended): The catalyst composition of claim 13, wherein rhodium is present in the amount of and comprising from about 0.04% to about 10% of indium by weight of the total catalyst composition including the support.

Claim 26 (currently amended): The catalyst composition of claim 13, wherein the metal in said third metal component is present in the amount of and comprising from about 0.01% to about 50% of the metal of the third metal component by weight of the total catalyst composition including the support.

Claim 27 (currently amended): The catalyst composition of claim 13, wherein the metal in said third metal component is present in the amount of and comprising from about 0.05% to about 30% of the metal of the third metal component by weight of the total catalyst composition including the support.

Claim 28 (Cancelled)

Claim 29 (Cancelled)

Claim 30 (currently amended): The catalyst composition of claim 13 claim 29 wherein the metal in said third metal component is iron present in the amount of and the catalyst

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composition comprises from about 0.05% to about 30% of iron by weight of the total catalyst composition including the support.

Claim 31 (currently amended): The catalyst composition of claim 13 claim 29 wherein the metal in said third metal component is iron present in the amount of and the catalyst composition comprises from about 0.1% to about 20% of iron by weight of the total catalyst composition including the support.

Claim 32 (currently amended): The catalyst composition of claim 13 claim 29 wherein the metal in said third metal component is cobalt present in the amount of and the catalyst composition comprises from about 0.05% to about 30% of cobalt by weight of the total catalyst composition including the support.

Claim 33 (currently amended): The catalyst composition of claim 13 claim 29 wherein the metal in said third metal component is cobalt present in the amount of and the catalyst composition comprises from about 0.1% to about 25% of cobalt by weight of the total catalyst composition including the support.

Claim 34 (currently amended): The catalyst composition of claim 13 claim 29 wherein the metal in said third metal component is ruthenium present in the amount of and the catalyst composition comprises from about 0.05% to about 10% of ruthenium metal by weight of the total catalyst composition including the support.

Claim 35 (currently amended): The catalyst composition of claim 13 claim 29 wherein the metal in said third metal component is ruthenium present in the amount of and the catalyst composition comprises from about 0.1% to about 5% of ruthenium metal by weight of the total catalyst composition including the support.

Claim 36 (currently amended): A method of making a catalyst composition according to claim 13, the method comprising:

- (a) applying a rhodium compound to a surface layer of a support having a depth of not more than 300 microns;

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- (b) applying an indium compound to a surface layer of the support having a depth of not more than 300 microns; and optionally
- (c) applying a compound of a third metal selected from the group consisting of iron, cobalt, and ruthenium different from rhodium and from indium and selected from Groups 1 to 15 of the Periodic Table of Elements to the support.

Claim 37 (previously presented): The method of claim 36 wherein said third metal compound is applied to the support before either the rhodium compound or the indium compound.

Claim 38 (previously presented): The method of claim 36 wherein the indium compound is applied to the support either concurrently with or before the rhodium compound.

Claim 39 (Original): The method of claim 36 wherein at least one of (a), (b) and (c) is effected by an impregnation, precipitation, slurry mixing or coating step.

Claim 40-43 (Cancelled)

Claim 44 (Original): The method of claim 36 and, after (a) and/or (b) and/or (c), calcining the support at a temperature of about 100°C to about 600°C.

Claim 45 (Original): The method of claim 36 and, after (a), (b) and (c), treating the calcined support in a reducing atmosphere at a temperature in excess of 200°C.

Claim 46 (Withdrawn): A process for selectively removing alkynes or diolefins from a feedstock also containing olefins, the process comprising contacting the feedstock with hydrogen in the presence of a catalyst composition made by the method of claim 36.

Claim 47 (Withdrawn): A process for selectively removing alkynes or diolefins from a feedstock also containing olefins, the process comprising contacting the feedstock with hydrogen in the presence of a catalyst composition as claimed in claim 1.

Claim 48 (Withdrawn): The process of claim 47 wherein the alkynes or diolefins have 2 to 4 carbon atoms and the feedstock also contains C₂ to C₄ olefins.

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Claim 49 (Withdrawn): The process of claim 47 wherein said contacting is conducted at a temperature of from about 20°C to about 150°C, a pressure of from about 690 kPa to 4100 kPa, and a molar ratio of hydrogen to alkynes and diolefins of from about 1 to about 1000.

Claim 50 (Withdrawn): The process of claim 47 wherein said contacting is conducted at a temperature of from about 30°C to about 100°C, a pressure of from about 1400 kPa to 3400 kPa, and a molar ratio of hydrogen to alkynes and diolefins of from about 1.1 to about 800.

Claim 51 (cancelled)

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Support for the Amendment

Claim 13 now provides for a catalyst consisting of the two embodiments set forth in the specification, e.g., paragraphs [0016] and [0019]. That the (optional) third metal component may have a metal selected from iron, cobalt, and ruthenium finds support in paragraph [0039] and original Claim 29. Note that the definition of "component" includes the elemental metal and/or a compound of said metal, as set forth in paragraphs [0031] and [0043]. Claim 17 has also been incorporated into Claim 13. Claim 13 is further amended in the preamble to use the language "consisting of", which takes its well-accepted meaning. The remainder of the amendments are believed to be strictly editorial in nature and/or to conform to the new language in Claim 13 concerning "consisting of".

It is believed that there is no possibility of new matter.